# In The Main

*The quarterly newsletter for public water systems • Winter 2006*

## *LT2ESWTR, stage 2 DBPR are final*

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### EPA to oversee rules

In early January, EPA published the final Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) and Stage 2 Disinfectants and Disinfection By-Products Rule (DBPR). Water systems of all sizes and types are strongly encouraged to review these rules that have changed significantly since proposed in August 2003. Unlike most rules, requirements go into effect prior to states' receiving primacy and the legal authority to enforce the rules. So, for many states, including Massachusetts, EPA regional staff will oversee the early rule deadlines, provide training to water systems, and answer questions regarding requirements until Massachusetts receives primacy. If you need assistance you may contact EPA's Adrienne Harris at 617-918-1518 or Kevin Reilly at 617-918-1694. MassDEP staff in Boston and the regions is available to assist with special cases and provide general information.

### Who is affected and when are the first deadlines?

### Stage 2 DBPR

This rule applies to all community and non-transient non-community water systems that treat their water with a disinfectant other than ultraviolet light or deliver water that has been treated with a disinfectant other than ultraviolet light. Key provisions include calculating locational running annual averages at each monitoring location for determining compliance and conducting an initial distribution system evaluation (IDSE) to identify locations at which DBP

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## *drinking water eDEP is launched*

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MassDEP has just implemented Drinking Water eDEP, which is an electronic filing tool that laboratories can use to submit drinking water data to MassDEP on behalf of public water systems.


The following contaminant groups can now be filed electronically through eDEP: Nitrate, Nitrite, HAA5, TTHM, Lead & Copper, Inorganics, Radionuclides, PCE, SOC, Secondary Contaminants, Bacteria, VOCs, Asbestos, Sodium, Chlorite, and Chlorine Dioxide.

Filing electronically takes the place of submitting paper copies and has many benefits for you and your lab.

- Meets US EPA/MassDEP record-keeping requirements
- Immediate confirmation of receipt upon filing
- Is safe, secure, available 24/7
- Has a secure sharing feature that is available to registered users so that you may view your data on-line before or after it is submitted by your lab
- Reduces paper / mailing costs
- It minimizes most filing errors
- It reduces time

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concentrations are highest. Maximum contaminant levels remain the same at 80 and 60 µg/L respectively for TTHM and HAA5 and compliance is no longer determined on a distribution system wide running annual average.

Deadlines are based on system size and will be implemented according to four schedules. The first major deadline (Schedule 1) applies to large systems serving 100,000 or more AND the smaller consecutive systems that are part of an overall combined distribution system with the large systems. These systems must submit ISDE monitoring plans by October 1, 2006. Systems serving 50,000 to 99,999 (Schedule 2) and their consecutive systems must submit IDSE plans by April 1, 2007. Systems serving 10,000 to 49,999 (Schedule 3) and their consecutive systems must submit IDSE plans by October 1, 2007. Systems serving less than 10,000 must submit IDSE plans by April 1, 2008.

### LT2ESWTR

This rule applies to all systems, regardless of type or size, that use surface water or ground water under the direct influence of surface water. Key provisions include source water monitoring for *Cryptosporidium* with a screening provision for small systems; increased treatment requirements for systems with high *Cryptosporidium* source water results; and covering or treating uncovered finished water storage facilities.

Like the Stage 2 DBPR, the deadlines are based on system size and systems must comply with requirements applicable to the largest system in the combined distribution system. By July 1, 2006, systems serving 100,000 or more (Schedule 1), must submit their source water monitoring plans, intent to use grandfathered *Cryptosporidium* data, or intent to install full treatment. Systems serving 50,000 to 99,999 (Schedule 2) must submit by January 1, 2007. Systems serving 10,000 to 49,999 must submit by January 1, 2008. Systems serving less than 10,000 and monitoring for *E.coli* (applies only to filtered systems) must submit by July 1, 2008. Systems serving less than 10,000 and monitoring for *Cryptosporidium* (applies only to filtered systems that exceed the *E.coli* trigger or do not monitor for *E.coli* and to unfiltered systems) must submit by January 1, 2010. All wholesale systems must monitor their own source water based on the requirements of the largest system in the combined distribution system.

## Training

Two training sessions will be held at the NEWWA's Annual Operations Conference, Worcester, MA on April 5-6. Call NEWWA for more information at 508-893-7979. A two-hour overview of Stage 2 and associated EPA fact sheets and guidance documents will be presented in the morning on day one; IDSE requirements will be presented in the pm. LT2ESWTR training will follow a similar format on day two with presentations on *cryptosporidium* monitoring requirements and how to determine if a system must install additional treatment. EPA is planning additional system training for April or May 2006.

## For More Information

Water systems of all sizes are strongly encouraged to review these very complex rules. AWWA provides exceptional summaries at http://www.awwa.org/Advocacy/govtaff/issues/Issue02_Disinfectants_By-Products.cfm

EPA early implementation information is posted at: http://www.epa.gov/safewater/disinfection/. ITM

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MassDEP encourages systems to talk to their laboratories about using eDEP to file their drinking water data. Paper forms will still be accepted, however, MassDEP is anticipating that electronic reporting will be mandatory in the future.

For more information on Drinking Water eDEP, contact Andrew Durham at 617-574-6855 or email MassDW.eDEP@state.ma.us

For information on eDEP's features or to sign up as a registered user visit www.mass.gov/dep/ and click on eDEP On-line Filing. ITM

**In The Main**

Contact the ADA Coordinator at DEP to request alternative format
www.mass.gov/dep

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**Department of Environmental Protection**
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# *incompatible chemicals*

A wide variety of chemicals react dangerously when mixed with certain other materials. Some of the more widely used incompatible chemicals are given below, but the absence of a chemical from this list should not be taken to indicate that it is safe to mix with any other chemical.

This list was reprinted with permission from the Massachusetts Institute of Technology Environmental Health and Safety website http://web.mit.edu/environment/index.html . This list can be a good reference for your chemical treatment plant. Visit MIT's site for more information on the environment.

**acetic acid**: chromic acid, ethylene glycol, nitric acid, hydroxyl compounds, perchloric acid, peroxides, permanganates

**acetone**: concentrated sulphuric and nitric acid mixtures

**acetylene**: chlorine, bromine, copper, fluorine, silver, mercury

**alkali and alkaline earth metals**: water, chlorinated hydrocarbons, carbon dioxide, halogens, alcohols, aldehydes, ketones, acids

**aluminium (powdered)**: chlorinated hydrocarbons, halogens, carbon dioxide, organic acids.

**anhydrous ammonia**: mercury, chlorine, calcium hypochlorite, iodine, bromine, hydrofluoric acid

**ammonium nitrate**: acids, metal powders, flammable liquids, chlorates, nitrites, sulphur, finely divided organic combustible materials

**aniline**: nitric acid, hydrogen peroxide

**arsenic compounds**: reducing agents

**azides**: acids

**bromine**: ammonia, acetylene, butadiene, hydrocarbons, hydrogen, sodium, finely-divided metals, turpentine, other hydrocarbons

**calcium carbide**: water, alcohol

**calcium oxide**: water

**carbon, activated**: calcium hypochlorite, oxidizing agents

**chlorates**: ammonium salts, acids, metal powders, sulphur, finely divided organic or combustible materials

**chromic acid**: acetic acid, naphthalene, camphor, glycerin, turpentine, alcohols, flammable liquids in general

**chlorine**: see bromine

**chlorine dioxide**: ammonia, methane, phosphine, hydrogen sulphide

**copper**: acetylene, hydrogen peroxide

**cumene hydroperoxide**: acids, organic or inorganic

**cyanides**: acids

**flammable liquids**: ammonium nitrate, chromic acid, hydrogen peroxide, nitric acid, sodium peroxide, halogens

**hydrocarbons**: fluorine, chlorine, bromine, chromic acid, sodium peroxide

**hydrocyanic acid**: nitric acid, alkali

**hydrofluoric acid**: aqueous or anhydrous ammonia

**hydrogen peroxide**: copper, chromium, iron, most metals or their salts, alcohols, acetone, organic materials, aniline, nitromethane, flammable liquids, oxidizing gases

**hydrogen sulphide**: fuming nitric acid, oxidizing gases

**hypochlorites**: acids, activated carbon

**iodine**: acetylene, ammonia (aqueous or anhydrous), hydrogen

**mercury**: acetylene, fulminic acid, ammonia

**mercuric oxide**: sulphur

**nitrates**: sulphuric acid

**nitric acid (conc.)**: acetic acid, aniline, chromic acid, hydrocyanic acid, hydrogen sulphide, flammable liquids, flammable gases

**oxalic acid**: silver, mercury

**perchloric acid**: acetic anhydride, bismuth and its alloys, ethanol, paper, wood

**peroxides (organic)**: acids, avoid friction or shock

**phosphorus (white)**: air, alkalies, reducing agents, oxygen

**potassium**: carbon tetrachloride, carbon dioxide, water

**potassium chlorate**: acids

**potassium perchlorate**: acids

**potassium permanganate**: glycerin, ethylene glycol, benzaldehyde, sulphuric acid

**selenides**: reducing agents

**silver**: acetylene, oxalic acid, tartaric acid, ammonium compounds, fulminic acid

**sodium**: carbon tetrachloride, carbon dioxide, water

**sodium nitrate**: ammonium salts

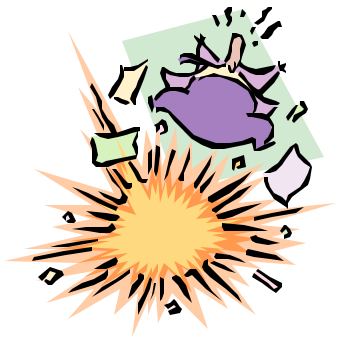
**sodium peroxide**: ethanol, methanol, glacial acetic acid, acetic anhydride, benzaldehyde, carbon disulphide, glycerin, ethylene glycol, ethyl acetate, methyl acetate, furfural

**sulphides**: acids

**sulphuric acid**: potassium chlo
potassium perchlorate, potassiur
permanganate (or compounds w
similar light metals, such as sodi
lithium, etc.)

**tellurides**: reducing agents

**zinc powder**: sulphur



# *daycare/education lead pilot project*

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In early 2005, MassDEP, Worcester State College (WSC), New England Interstate Water Pollution Control Commission (NEIWPCC), and EPA New England agreed to work together to promote the awareness of childhood lead poisoning from drinking water at daycare centers. This pilot project's objectives were to provide free lead sampling and analysis to daycares located in areas of historically high lead levels; to develop curriculum to teach undergraduates at WSC about lead in drinking water, sampling techniques, public education, outreach, and follow-up; and to provide daycares that exceeded the Massachusetts lead action level of 15 parts per billion (ppb) with guidance and mitigation strategies.

## Synopsis of the Project

WSC students were trained on the health ramifications of lead in drinking water, which also included demonstrations of EPA's sampling protocol on taking water samples. The student team then mailed a postcard detailing the project to over 200 daycares located in areas where lead sampling historically exceeded the action levels. Twenty-five daycares agreed to participate in the project.

EPA New England's lab provided the WSC project team with sampling bottles and an approved quality assurance program plan (QAPP). The project team visited each daycare to drop off bottles, identify sampling sites, review sampling protocol, and provide educational materials. The daycares took the samples.

WSC project team members picked up the samples from the 25 daycares. They discussed possible results and an action plan if lead levels exceeded the action level. Samples were delivered to the lab and analyzed. Duplicate samples were taken as required by the QAPP.

## Results

The results indicated that only four (16 %) (See table below) out of the twenty-five daycares that were sampled had at least one sample that exceeded the Massachusetts lead action level of 15 ppb. Therefore, twenty-one out of the twenty-five daycares sampled (84 %) had no detected amounts or had levels below 15 ppb.

Listed below are the sampling results from the daycares that exceeded the lead action level. Shaded areas exceed allowable limit.

### Daycares exceeding Lead Action Level of 15 ppb

| Daycare Name | 1st draw - ppb | 2nd draw - ppb | Duplicate - ppb | 3rd draw - ppb | Remediation |
|---|---|---|---|---|---|
| Daycare 1 | 17 | 3.2 | n/a | 3.3 | Bottled Water |
| Daycare 2 | 16 | 2.6 | n/a | 2.3 | Flushing Procedure |
| Daycare 3 | 17 | 4.9 | n/a | 2.9 | Flushing Procedure |
| Daycare 4 | 10 | 84 | 21 | 10 | Bottled Water |

The 1st draw samples for daycares 1,2,3 exceeded the Massachusetts action level. The high levels in the 1st draw sample could indicate that lead or brass fixtures could be the cause of the elevated levels. Additional sampling was recommended.

The results for daycare 4 (2nd draw and duplicate sample) indicate that the high concentrations of lead could be attributable to internal plumbing or a lead service line. Additional sampling was recommended.



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### Remediation Action

Two out of the four daycares listed in Table 1 are using bottled water. The other two have indicated that they have implemented a daily manual flushing procedure.

### Follow-up

MassDEP and WSC discussed the results with the twenty-five daycares. All were encouraged to continue to sample periodically. The daycares were also told where to get additional information and who to call should they need more assistance.

### Curriculum Development

WSC monitored the activities of the student project team and built the project into class curriculum of two college level courses for the fall 2005 and spring 2006 semester. WSC also presented preliminary project results at an annual gathering of Massachusetts Colleges.

### End Note

This was a winning situation for all who participated in the project. The daycares were educated about lead in drinking water, what it can do to children, and how to alleviate the problem. WSC developed an education program from it and could be pioneer of lead education in college curriculums. MassDEP, NEIWPCC, and EPA received information for their continued studies on lead. This project can be adapted for any community. If you would like to be considered for the next project please contact Michael Maynard at 617-556-1106. ITM

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# *2006 awards*

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Drinking Water Week this year is May 7 through the 13. Is your system planning any drinking water events such as open houses or activities for school children? MassDEP along with its partners NEWWA, RCAP Solutions, MWWA, and US EPA will celebrate the top drinking water systems in the state on Thursday, May 11 at an awards ceremony in the Statehouse in Boston.

The awards program contains two new awards this year. One is called the STAR L Award. This award will be given to the system (and its partner) that documents the best drinking water lead reduction program within their schools and childcare facilities. The other new award is the Small System Security Award which will be given to the small system that has been deemed the most proactive in enhancing security. Your system was mailed information and applications for these awards with your annual statistical report form in January. Copies are also available on-line at http://www.mass.gov/dep/water/compliance/awards.htm.

You should have received the kick-off letter for the annual Public Water System Awards program in early February. If not, you may also get it on-line.

Awards winners will be notified by mail in late April and will receive a special invitation to attend the award ceremony. Plan to attend the festivities and meet other PWSs from around the Commonwealth. Visit the MassDEP website often to keep updated on the Drinking Water Day activities.

Save the date – May 11, 2006 – for the annual Drinking Water Awards Day! ITM

Photo by Chuck Larson

*Lynn Water Dept. accepting their 2005 Award*

Photo by Cathy Vakolopoulis

Boston Common Ice Sculpture

**In The Main**
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Printed by DEP Operations staff on recycled paper.
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# *21 towns are switching regions*

MassDEP operates four regional offices to bring information and assistance closer to those who need it. To improve services and the efficiency of field operations, MassDEP is reassigning 21 communities from their current regional office to a different regional office. These shifts will take place in two phases; effective either February 1, 2006 or May 1, 2006. The chart identifies which communities will have a new regional office. To find the MassDEP regional office for any community on-line, visit http://www.mass.gov/dep/about/region/findyour.htm.

If your PWS switches regions you will have to contact your new regional office to which your community has been reassigned for any assistance.

Western Office
436 Dwight Street
Springfield, MA 01103
413-784-1100

Central Office
627 Main Street
Worcester, MA 01608
508-792-7650

Southeast Office
20 Riverside Drive
Lakeville, MA 02347
508-946-2700

(moved in Dec 2005)
Northeast Office
205B Lowell Street
Wilmington, MA 01887
978-694-3200

To find out about your new region go on-line at:
http://www.mass.gov/dep/about/region/westernr.htm
http://www.mass.gov/dep/about/region/centralr.htm
http://www.mass.gov/dep/about/region/northeas.htm
http://www.mass.gov/dep/about/region/southeas.htm

| Community | Move from | Move to | Date |
|---|---|---|---|
| Athol | Central | Western | 2/1/06 |
| Braintree | Northeast | Southeast | 5/1/06 |
| Canton | Northeast | Southeast | 5/1/06 |
| Cohasset | Northeast | Southeast | 5/1/06 |
| Franklin | Southeast | Central | 5/1/06 |
| Hardwick | Central | Western | 2/1/06 |
| Hingham | Northeast | Southeast | 5/1/06 |
| Holbrook | Northeast | Southeast | 5/1/06 |
| Hull | Northeast | Southeast | 5/1/06 |
| Medfield | Northeast | Central | 5/1/06 |
| Millis | Northeast | Central | 5/1/06 |
| Norfolk | Northeast | Central | 5/1/06 |
| Norwood | Northeast | Southeast | 5/1/06 |
| Petersham | Central | Western | 2/1/06 |
| Randolph | Northeast | Southeast | 5/1/06 |
| Royalston | Central | Western | 2/1/06 |
| Tyngsboro | Central | Northeast | 5/1/06 |
| Walpole | Northeast | Southeast | 5/1/06 |
| Warren | Central | Western | 2/1/06 |
| Westford | Central | Northeast | 5/1/06 |
| Weymouth | Northeast | Southeast | 5/1/06 |